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ENGINEERING NEWS-RECORD

SEPTEMBER 9, 1948

The U.S. Army's $36,000,000 Tripler General Hospital, near Honolulu, is dedicated

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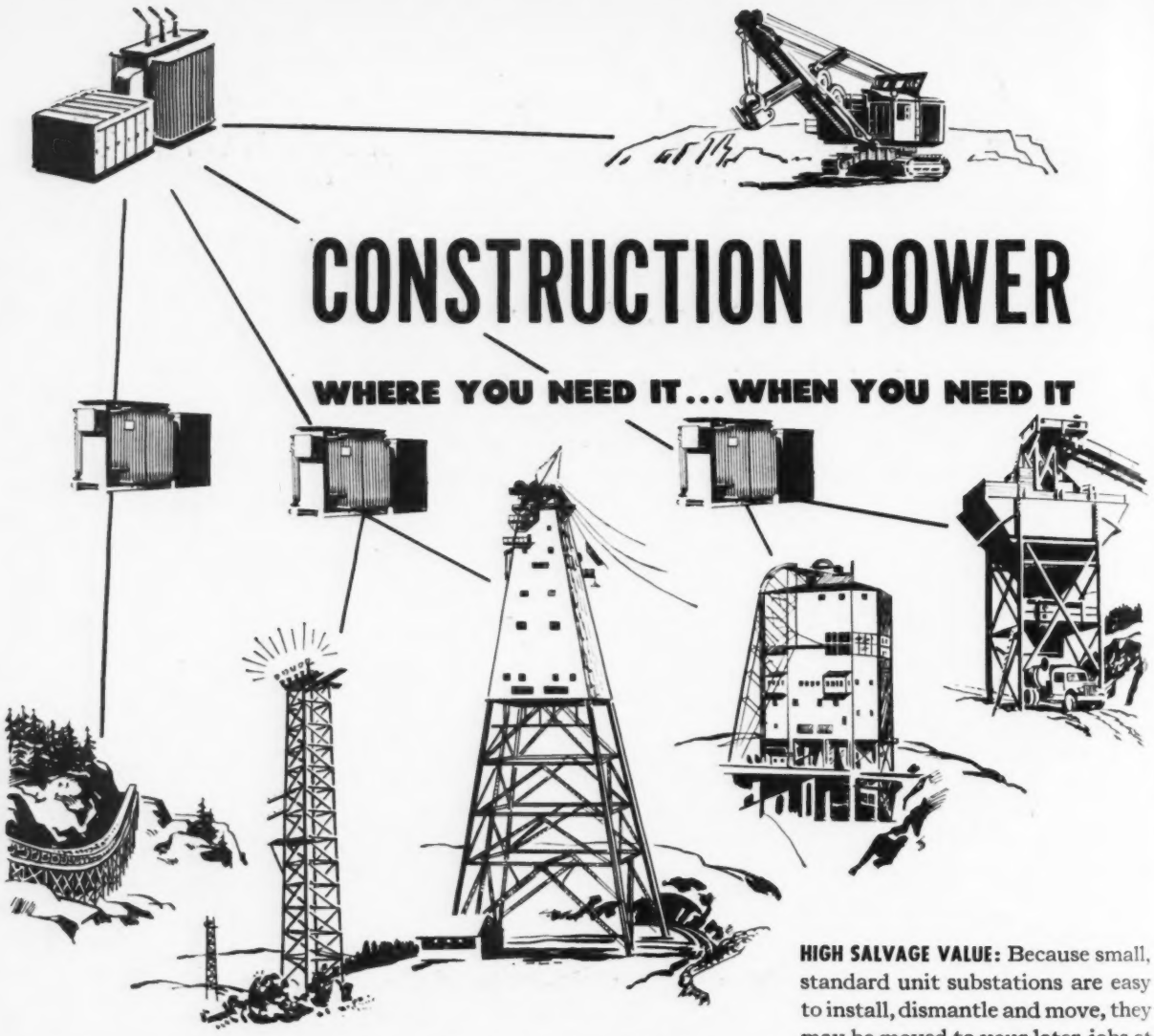

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News of the Week

ENGINEERING NEWS-RECORD • SEPTEMBER 9, 1948 • VOLUME 141 • NUMBER 11

Skilled help, materials lack seen top construction worry

Survey shows need for trained men in every phase of industry—Steel, cement pipe shortage reported—Trend toward tightening of finances found

The two biggest problems facing the U. S. construction industry today are lack of skilled workers, and slow-delivery or non-delivery of materials.

In a nation-wide survey covering more than 50 cities, 450 civil engineers, contractors, architects, suppliers and others listed their outstanding problems as:

1. Shortage of skilled labor
2. Obtaining materials
3. Prices

Conducted by *Engineering News-Record's* network of more than 80 correspondents, and six news bureaus in the United States, the survey asked only one question—"What is your most serious problem today?"—but it turned up answers that fell into the same pattern to give a clear idea of the industry's headaches under present day conditions. In general, the picture was good—but there were several darker overtones. Among them, financing by public and private buyers of construction is tightening up.

The almost universal preoccupation with lack of manpower extended from the design offices of consulting engineers, architects, city engineers and others to the contractors' field forces. The shortage of skilled technicians and materials were blamed by most for the corollaries of mounting prices, uncertain bidding, and the apparent growing reluctance of buyers to invest in a product for which no certain price can be set.

From the offices of engineers, architects and city and state administrators the theme was repeated—lack of technically trained men, such as draftsmen, estimators, field and office engineers and supervisory personnel. The contractors, listing similar scarcities, extended the demand by noting almost universal shortages of craftsmen—bricklayers, plasterers, and other trowel trades in particular.

The contractors, too, coupled some scathing criticism of labor as such with their estimates of their needs. They called labor unwilling to take responsibility, unwilling to do a full day's work, and in some cases incompetent.

Training programs questioned

And, of course, the shortage propounded questions for the industry: How well are the apprentice-training programs working, and how fast are they turning out craftsmen; how well and how fast are the technical schools turning out qualified men.

Commenting on the skilled-labor shortage, one contractor said he saw in it a reflection of increasing mechanization which has forced labor out of the traditional common-labor pattern into ever increasing specialization.

Materials hard to get

On an equal plane with the labor problem, the survey showed that construction materials are still far from pre-war standards from an availability viewpoint.

This delay is of course reflected in uncertain bids or higher bids than normal when contractors attempt to protect themselves against eventualities. The shortage of almost all forms of steel—rolled shapes, plate, reinforcing bars—affect consulting engineers and architects as well as others, when they find themselves unable to specify delivery dates and sizes with any reasonable accuracy.

Many contractors and others, according to the survey, were convinced that much of the nation's record steel production is headed overseas to aid Marshall-plan nations, and were inclined to

(*Continued on p. 3*)

Douglas fir price drops $2 in week

A major break in the price of Douglas fir lumber appeared to be in the making last week, as markets in New York City and San Francisco recorded a drop of $2 to $2.50 per thousand board-feet for the product.

The decrease in price, occurring within a ten-day period, was accompanied by a slower decrease in the price of short-leaf yellow pine, which came down about 70 cents on a nation-wide basis within the same period.

According to *Engineering News Record's* 20-cities average, Douglas fir was being delivered for between $107.50 and $112.50 per thousand b.ft. last week in New York City, and for $79 per thousand b.ft. at the mill in San Francisco. Detroit also recorded a slight drop in this class of lumber.

The Southern pine average, as shown in four cities (Chicago, Detroit, Baltimore and Atlanta) has similarly declined.

Specifically, the drop in New York was called "between $2 and $4" by local lumbermen, who were inclined to be hesitant about predicting any general decline in view of a current strike of longshoremen on the Pacific Coast.

A reason for the decline, however, could be found in the 69th quarterly report of the lumber survey committee of the U. S. Department of Commerce, which said last week that 1948 production will reach 37,500,000,000 b.ft.—between two and five percent greater than 1947 and sufficient, in the committee's view to meet the demands of 1948 construction programs. Indicating that supply pipelines are nearly full, the report said that stocks in retail yards are now at 4,700,000,000 b.ft., as compared with 1,700,000,000 b.ft. in 1939 and 1940.

If a real drop in the price of lumber is beginning, it will be the first major change downward since mid-June of 1947, when the *ENR* average showed a sudden break of nearly $5 within a month. At that time the average went to a low of $81.57. It then climbed back to a peak of $93.54 in February, 1948, and had remained fairly steady near that figure until the end of July of this year.

NEWS BRIEFS

Highways—Work has finally started on the Pennsylvania highway department's $1,213,804 Vine St. *Philadelphia* overpass after being delayed by court actions . . . A marked slow-down in highway construction in *Virginia* was predicted by Commissioner James A. Anderson because revenues are not keeping up with increasing costs . . . A $7,725,856 program of secondary road construction in *New Jersey* was approved recently . . . Paving *Canada's* part of the Alcan Highway will not be started until 1949, according to the Canadian Department of National Defense . . . *Idaho* has recently completed some 95 miles of highways and two bridges at a cost of $1,800,000 and has more than $7,000,000 of work expected to be completed before winter . . . A 6.6-mile system of arterial highways estimated to cost $3,108,000 has been proposed for *Geneva, N. Y.*

Public Construction—A $3,000,000 atomic research center and hospital is planned for the University of Tennessee at *Knoxville* . . . A $3,270,000 contract has been let by the FWA for expansion of hospital facilities at *Bethesda, Md.* . . . *Illinois* will spend $1,822,317 for 15 new recreational lakes. . . . Letting of two contracts for hospital construction at Ohio State University, *Columbus*, is held up because the bids totaling $3,414,000 are $1,214,690 over the estimate . . . The A. L. Jackson Co. will start work soon on a $1,554,200 high school building in *Hinsdale, Ill.*

Industrial Construction—Alan Wood Steel Co. is taking bids for the start of a new $8,900,000 steel mill in *Conshocken, Pa.* . . . Permanente Cement Co. has a six months option on a 498-acre cement plant site near *Helena, Mont.* . . . Completion of Socony-Vacuum's 127-mile oil pipeline between *Portland and Bangor, Me.*, is expected this year . . . American Foundry Co. is planning $2,500,000 foundry in *Indianapolis, Ind.*

Labor—Picketing of Bucyrus-Erie's *Evansville, Ind.*, plant by United Electrical Workers, CIO, attempting to halt construction by AFL workers was stopped by a temporary injunction ruling that the secondary boycott provisions of the Taft-Hartley Act was violated . . . A $1.75 per hour scale has been granted common laborers in *East St. Louis, Ill.* . . . A committee of contractor and labor union representatives has been organized in *Texas* to improve the training of apprentice carpenters.

Sewers and Water Supply—A $118,067 contract has been let by *Tuscumbia, Ala.*, for a 12 mgd. water plant . . . *Carlisle, Ky.*, is bringing in water by truck to combat a water shortage . . . *Gloucester, N. J.*, has received State Board of Health approval on plans for a $1,500,000 sewage disposal plant and incinerator.

Housing—*White Rock, N. M.*, is the name of a town to be built at a cost of $6,000,000 to house construction workers for the Atom Energy Commission. Completion date is May 31, 1949 . . . *Oak Ridge, Tenn.*, will have 500 new homes if the AEC lets a $6,531,373 contract to low bidder John A. Johnson & Sons, Inc. . . . An additional $30,000,000 state credit was voted by the *Connecticut* assembly to aid municipal housing projects . . . After a seven-year delay because of federal limitations on cost, a low bid of $11,989,620 by John Bowen Co. was received by the Boston Housing Authority for a 972-apartment unit *South Boston, Mass.*, project. Financing is to be under a state-aid program . . . Paul J Mirable has started construction of a $5,000,000 residential project in Philadelphia.

Highways—Highway improvements valued at $2,733,000 were placed under contract in various *Illinois* counties during July. . . . State and city engineers are conferring on the building of the first superhighway into downtown *Akron, Ohio.*

Wide World Photo

ARABIAN WIRE ROPE TRICK—This 20-ton rig brings 30-in. pipe—for the 1,050-mile line presently under construction in Saudi-Arabia—over a three-mile course from ship to storage depot in five minutes. It was devised and tested in the U. S. by Pointer-Willamette Co., Portland, Ore.

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Western group hears reclamation talk

Reports indicate that the Association of Western State Engineers at its annual meeting in Flagstaff, Ariz., Aug. 23-26, criticized Reclamation Bureau policies less caustically than at last year's gathering in Boise, Idaho. A resolution passed at the 1947 meeting denounced the Bureau's record in "replacement of experienced men and introduction of debatable policies based on questionable theories" (*ENR*, Sept. 25, 1947, Vol. p. 427).

Speaking on this theme at the Flagstaff meeting, Assistant Reclamation Commissioner Kenneth Markwell declared that bureau officials are merely carrying out the duties to which they are pledged under their oath of office. The oath, he said, binds them to uphold statutes enacted by various Congresses.

Among them, he pointed out, are statutes that concern land limitation and public power policy ,among other things. Laws defining federal policy on those two much-debated issues, he said, are deeply rooted in reclamation development of the West. They preceded today's reclamation administration, he declared, and the present bureau administration has preserved and upheld them unchanged.

Rhetorically he asked the state engineers, "Don't you think your forefathers would be somewhat surprised, even alarmed, to learn that these laws they passed have been termed 'questionable social theories'?"

John J. Walsh, chief engineer of the North Dakota Water Conservation Commission and former vice-president of the association, was elected president for this year. His successor as vice-president is John H. Bliss, New Mexico State Engineer.

USPHS appoints E. C. Garthe head of Carrier Section

Edmund C. Garthe, sanitary engineer, has been appointed to head the Land and Air Carrier Section of the Sanitary Engineering Division of the Public Health Service. Mr. Garthe succeeds H. Norman Old, sanitary engineer director who is now assigned to the Bureau of Medical Services.

Mr. Garthe received his civil engineering degree from Rensselaer Polytechnic Institute in 1933 and Master in Public Health from the University of Michigan in 1948. He has been with the Public Health Service since 1936.

In 1942 he was commissioned in the Reserve Corps as assistant sanitary engineer, and shortly thereafter promoted to sanitary egnineer. He entered the Regular Corps as sanitary engineer in August, 1945, and was transferred several months later to the Chicago District as district engineer.

The Land and Air Carrier Section is concerned with the compliance by common carriers with the requirements of the interstate quarantine regulations regarding the sanitary quality of food and drinking water served on conveyances operating in interstate traffic.

FIRST CONCRETE FOR CRESTA DAM will be pumped through the pipe being set by workmen. The dam is a 60,000 cu. yd. project of the Pacific Gas and Electric Co., and is located on the north fork of the Feather River in California. Later concrete will be placed by the derrick seen between the workmen and the concrete plant. The dam is a portion of a $62,000,000 Feather River development that will add some 201,000 kw. generating capacity to the California supply.

Builders tell problems

(*Continued from p.* 1)

assign this as a reason for their own troubles. That this is not the case, and that much more potent reasons exist, was overlooked.

Cement, too, partly due to the confusion resulting from recent Supreme Court action on the basing-point price system, partly to greater demand for the product itself, is short almost everywhere.

Contractors and engineers working on waterworks and allied utility projects reported shortages of pipe for their needs. Other principal short or slow-delivery items included machine parts and repair equipment. Lumber apparently has very nearly caught up with demand, although there was some criticism of its quality.

Finance tightening

Prices in general, tied by most to the uncertain labor and materials market, were the key to a number of indications of tightening financing.

First to feel the hardening money market are the municipalities, which must operate on fixed amounts of money —provided by bond issue or appropriation. Many of the cities, having started to build some needed project, have found it necessary to go back to the voters or finance groups for more money, after prices have jumped out of sight of original estimates. Municipal engineers and other officials reported that bond houses were showing a reluctance to handle municipal issues.

Architects and consultants, too reported a discernible—though not yet alarming—trend among their customers to postpone or cancel some work, in the belief that the present prices are so uncertain as to make investment in construction a doubtful enterprise at the moment.

FOREIGN DEVELOPMENTS

Hawaii—A new Tripler General Hospital, built for the U. S. Army at a cost of $36,000,000 near Honolulu, on Oahu, has been completed, and its dedication date is September 10 (*ENR*, July 12, 1945. Vol. p. 44).

Started in July 1944 under supervision of the Army Engineers, the rigid-frame concrete structure was designed to resist seismic disturbances, which are not uncommon to the location of its 365-acre hillside tract. Designed for a horizontal thrust greater than that caused during the worst recorded earthquake, the building is made up of 12 structurally isolated units.

Honeycombed volcanic soil presented a serious foundation problem. It was met by taking core borings at practically every column location and designing each footing individually in the field from information gained by the borings.

In a few cases conditions were found so uncertain that excavation had to be carried down to a suitable bearing surface before actual design of the footing could begin.

Large scale facilities

Five miles of road over the hillside and a reinforced concrete, single span, arch bridge had to be built before construction on the main building could begin. Two 500,000-gal. water tanks, a 94,800-ft steam distribution system and two miles of 30-in. trunk sewer were also installed. In these systems every possible advantage was taken of the sloping terrain.

Built to house 1,500 beds with expansion facilities for 500 more in an emergency, the hospital was started by York and Sawyer, New York City architects, but was later turned over to Morrison-Knudsen Co., Inc., of New York, and Peter Kiewit Sons, Inc., for completion under Army direction.

Public Works

Australia—The State Rivers and Water Supply Commission of Victoria is spending $20,000,000 on irrigation works now in progress, and another $13,000,000 will be required for projects not yet started.

The commission is constructing a large dam to conserve the headwaters of the Glenelg River and to turn them inland through the Dividing Range. The dam will have a storage capacity of 264,000 acre-ft. Construction on the tunnel through the Dividing Range is well under way.

A 120,000-acre ft. reservoir has been started at Cairn Curran, on the Loddon River, and a new irrigation area of 44,000 acres will be developed in the Nambrook-Denison district of Central Gippsland through construction of a diversion weir on the Thomson River, enlargement of the Glenmaggie Reservoir and construction of many miles of channels and drains. Construction of this irrigation project is already in an advanced stage.

Other projects now in progress include the Wychitella System to provide 177,000 acres of land between Charlton and Korong Vale with domestic and livestock water supply, and the concrete-lining of the main and subsidiary channels in the Coliban System and other water supply works in Victoria.

Italy—Decision of the Italian Cabinet to assign 20 percent of the first allocation of European recovery funds to important public works in northern provinces will mean construction of new railways and roads and badly needed repair of bridges and viaducts damaged during the war. These public works will be done by private firms for the government and should be completed within the next four years.

Transport

Turkey—L. L. Marsh, maintenance engineer on the Public Roads Administration highway mission in Turkey, recently inspected the proposed route of the new 282-mile Ankara-Istanbul asphalt-paved highway with Turkish Minister of Public Works Nibat Erim and members of his technical staff. Because 90 percent of the American-supplied road construction machinery is being employed on the Toprankkale-Iskenderun-Erzurum highway, it is not certain whether the road between Ankara and Istanbul can be completed before the summer of 1949, as planned.

Nihat Erim praised the complete understanding and cooperation between American and Turkish engineers (*ENR*, July 15, p. 4), and Mr. Marsh expressed the conviction that Turkey would soon possess some of the most modern highways in the world. Mr. Marsh formerly was maintenance engineer for the Kansas state highway department.

In line with road improvements, a new traffic law is being drawn up in Turkey. Among other things, it will make it compulsory for drivers to carry bodily injury and property damage insurance. Regulations for issuing licenses will be tightened.

Russia—The Soviet railway transport system now has an aggregate length of 70,800 miles—an eight percent increase over 1940. Bridges and sections of track, demolished by the Germans in the once-occupied sections of the country, have been restored to normal traffic. Double-track service has been resumed in main directions, including lines from Moscow to the Donbass coal fields and to the North Caucasian grain and oil fields. Progress is reported in construction of the second Trans-Siberian line known as the "Southern Siberian."

Canada—Major construction programs are under way on the Kettle Valley division of the Canadian Pacific Railway. This work, in part, was necessitated by the disastrously high water in British Columbia last spring and

includes rebuilding of bridges and track which were washed out. Other construction in progress throughout the division is that previously planned and just recently begun in the railway's regular building schedule.

Also in Canada, construction of a $3,000,000 dock on the Bay of Fundy at St. John, N. B., will be accomplished by sinking eight concrete cribs onto a crushed-rock-paved harbor floor. The cribs—measuring 107 ft. long, 50 ft. wide and 50 ft. high—were built at the St. John Dry Dock Co. in East St. John and towed into place at the dock site.

Australia—Improvements to existing port facilities at Albany, Western Australia, to cost $241,000 and other new projects costing $3,525,000 have been approved by the state cabinet. The plans have been prepared by F. W. E. Tydeman, formerly consultant to the Singapore harbor board. They make provision for two new berths on a marginal quay layout system, including transit sheds, road access and marshalling yards. Reclamation of 64 acres will be necessary.

Because of insufficient port facilities, only 11,000 tons out of the total annual hinterland production and consumption of 150,000 tons is at present shipped through Albany.

England—A House of Commons committee has found after investigation that construction of London Airport at Heathrow is lagging behind schedules. They recommended erection of semi-permanent buildings and maintenance facilities as soon as possible, in view of the great savings which will be made possible to British airways corportions when the London Airport is available for use.

Water and Power

Australia—Warragamba Dam, now going up in the Warragamba Gorge, 40 miles from Sydney, will be one of the highest dams in the southern hemisphere. It is designed for a height of about 400 ft. above river level and a storage capacity of 455,000 mg. It will form the main source of water supply for Sydney and the south coast of New South Wales (*ENR*, Dec. 19, 1946, Vol. p. 827).

Tapering off from a base 330 ft. thick, the structure will contain about 1½ million cu.yd. of concrete. It will be a straight gravity mass concrete wall 1,300 ft. long with a central 290-ft. spill section. The estimated cost exclusive of channels and pipeline is $30,000,000.

Two cofferdams, up- and down-stream of the site, will be formed to de-water the construction area. Flows up to 3,600 cfs. will be passed around these by means of a 14-ft. x 18-ft. tunnel.

J. L. Savage, lately chief designing engineer of the U. S. Bureau of Reclamation, was consultant on the site and design of the dam.

Contracts have been let for a ropeway to carry 2,500,000 tons of aggregate from a gravel and sand deposit 12 miles distant from the dam site. The average span between towers will be 340 ft.

In New South Wales the struggle to keep pace with rapidly expanding power consumption is becoming more intense while the overburdened power stations are awaiting relief through installation of 400,000 kw. now on order. Meanwhile, a decision has been made to establish a steam power station for another 300,000 kw. on Lake MacQuarie to burn coal from mines that the state government is opening up in the district.

India—The hydro-electric power and irrigation potential of the eastern "panhandle" of India are coming in for a period of intensive survey and development.

The Indian province of Assam has been informed that the Himalaya-fed Brahmaputra River valley has one of the greatest potentials in that part of the world. The Indian Central Waterways, Navigation & Irrigation Commission has located four sites with a combined potential of 4,750,000 kw.

Miscellany

Australia—The State Electricity Commission of Victoria has invited L. R. Zimmerman, American expert on canal building equipment to advise on the construction of water races in connection with the Kiewa hydro-electric project (*ENR*, Mar. 11, vol. p. 386). Designs call for about 150 miles of concrete-lined channeling. Mr. Zimmerman is a partner in a California firm which makes equipment for trimming and lining concrete channels. He will stay in Australia for about a month.

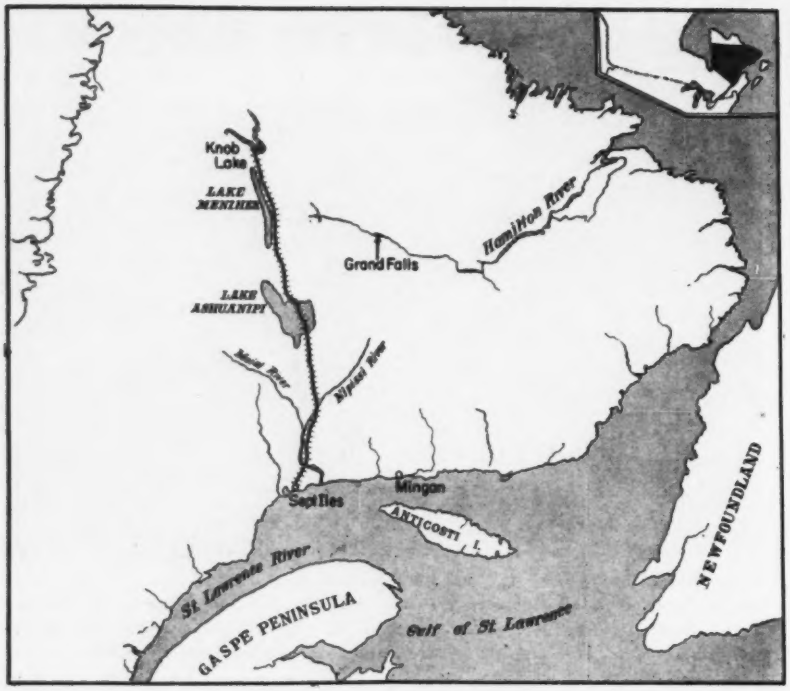
India—Robert E. Alexander, president of the Los Angeles City Planning Commission, has been retained to design and supervise the construction of a model industrial city near Madras. Alexander will be in the Far East for several months.

Canada—Plans are complete for construction of a $14,000,000 titanium ore refining plant at Sorel, Que., to be completed by mid-1950. Called the "Quebec Iron and Titanium Corporation," the newly formed refining organization is a subsidiary of the United States Kennecott Copper Corp. The organization is a natural outgrowth of the recent discovery—announced on Aug. 13—of possibly the world's largest known deposit of titanium, near Lake Allard, 400 miles northeast of Quebec.

In addition to the refinery a 27-mile railway will be built from the northern Gulf of St. Lawrence shore to the mineral area. Kennecott Company officials predict total expenditures on the project will be $25,000,000.

Titanium ore is refined into metal for high-grade alloys and also pigments for paint. At present India is by far the greatest producer of the metal.

WIND TUNNEL SITE—Half of 40-ft welded steel ring is hoisted into place by 150-ft cranes during construction of an aeronautical wind-tunnel at Avrieux in the French Alps (ENR, Jan. 1, Vol. p. 4). Air will be moved through the 390-meter tunnel at the speed of sound by two 15-meter diameter fans.



Montreal company plans 360-mile RR. to rich iron ore region in the North

Preliminary work will be completed this summer on what will be the largest railroad building project in Canada since the early 20's. Following that, the detail planning for a single track line to extend from Seven Islands, Que., to an exploration mining camp at Knob Lake—360 miles north—can get under way. The region is a little-known one and the terrain is wild and barren.

The railroad is planned by the Quebec, North Shore, and Labrador Railroad Co., a subsidiary of the Hollinger Consolidated Gold Mines, Ltd., Montreal. The sole reason for its construction is to move to deep water as much as possible of the tremendous deposits of rich iron ore, which are being proved up at the present time from what geologist call the "Ungava Trough," a series of shallow valleys, edged by rounded hills that rarely exceed 1,200 ft. in height. This trough extends about 350 miles in a general southeasterly direction from the estuary of the Koksoak River where it empties into Ungava Bay far to the north, and ending in the general area of Lake Ashuanipi.

The southern terminus of the railroad will be at Seven Islands, (Sept Iles) on the north shore of the St. Lawrence River, about 300 miles northeast of Montreal. Ore bins and docks for ocean carriers, as well as car sorting and storage yards, will be installed at Seven Islands.

North from Seven Islands the railroad will follow closely the course of the Moisie River to the junction of the Nipissi River, and the latter to the junction of the Wacouna River, thence north to Lake Ashuanipi (40 miles long) and Lake Menihek (60 miles long), and then along the north-south rivers that feed these lakes to the northern terminus at Knob Lake.

Easy grades

Topography of the area between Seven Islands and Knob Lake varies. The country rises rather sharply north of Seven Islands, the peak being reached some 50 miles from the St. Lawrence where a range of hills, running east and west, attains a height averaging 3,500 ft. and is cut by rapidly flowing rivers running south.

From this 50-mile point north the slope is a gradual one so that at approximately 100 miles from the southern terminus the elevation is about 1,800 ft. From that point to Knob Lake the country is comparatively flat.

Preliminary surveys, both ground and aerial, show the grade for the railroad north to a point about 100 miles from Seven Islands will be not more than two per cent, and from there to Knob Lake it will average about .2 per cent.

To attain this grade on the southern portion will necessitate considerable rock removal and erection of one bridge with a center span of perhaps 250 ft. No other large structures will be required the entire length of the railroad despite the fact the 250 northernmost miles will be across a country dotted with hundreds of shallow lakes.

Including sidetracks, turning and sorting yards, etc., the total trackage may be as much as 425 miles.

Diesel-electric power

Diesel-electric power is planned, with car dumping facilities much the same as those used at lower Lake Erie ports. At present rails in the 131-lb. class are planned inasmuch as the railroad can be expected to operate for as much as nine months in the year under heavy traffic. Plans call for the moving of ten million tons of ore from the Knob Lake area to dockside during such a 9-month period. The estimated time needed to transport a car of ore from Knob Lake to the Seven Islands ore bins is one day.

The estimated cost of the railroad is $100,000 per mile, with millions needed for equipment and auxiliary installations. W. H. Durrell, general manager of all field operations for Hollinger in the Labrador-Quebec area, who enhanced his reputation as an engineer during the war by constructing the Goose Bay airfield, believes the railroad can be built, with contracts awarded in 20-mile lots, in three years from the word "go", with two years needed for the grading and another year for laying the steel.

The Quebec, North Shore and Labrador Railway was chartered in 1947 with right-of-way granted by the Quebec and Newfoundland governments (Labrador being a part of Newfoundland, soon to become a province of the Dominion of Canada) together with timber rights. Sufficient lumber is available for practically all construction needs and there are unlimited deposits of fine grade gravel available for construction work. The railroad will start and end in the province of Quebec, but it will cross the northwestern part of Labrador.

When Durrell will receive the word for actual construction work to start depends at present upon a number of factors, including results of the field force's mapping and surveying of the 100 miles just north of Seven Islands, the financial arrangements and the time table to be decided by the owners for delivery of the ore to dockside.

(*Continued on next page*)

F. H. Cothran dies, built large power plants

Frank H. Cothran, 70, builder of the first great power plant on the Saguenay River in Quebec and the Beauharnois development on the St. Lawrence River above Montreal, died at Charlotte, N. C., Sept. 2. Since 1933 he has devoted his time to consulting work and to the affairs of the Piedmont & Northern Ry, of which he was president.

Mr. Cothran's early career was spent in railway location work, largely in the coal regions of West Virginia and in the Carolinas. In 1912 he entered the employ of the J. B. Duke interests as a division engineer on construction of the Piedmont & Northern Ry. and in 1944 he went to Canada to take charge of the preliminary studies for development of the power resources of the Saguenay River for the Duke-Price interest. Later, (1923-25) as vice president of the Quebec Development Co. and the Duke-Price Power Co., he was placed in charge of construction of the 500,000 hp. Isle Maligne plant on the Saguenay and of the first units of the Arvida aluminum plants in 1926.

After serving as chief engineer of the P. & N. Ry. for two years, Mr. Cothran went again to Canada to take charge of construction of the first stage of the Beauharnois power project, which is designed ultimately to develop 2,000,000 hp. After five years in that work he returned to Charlotte, later serving as a consultant on the Passamaquoddy tidal power project and on the construction problems at Grand Coulee, Bonneville, and Fort Peck dams.

Indiana county considers rebuilding old bridges

One Indiana county is going to do something about rebuilding its antiquated and hazardous bridges. The Allen County Council has before it the report of County Highway Supervisor Ivan Troyer that it will require $2,500,000 for new bridge construction in the county during the next few years.

Most of the county bridges do not have center supports and cross rivers with single spans of 200 ft. or more, Troyer reports. Many of the bridges vibrate excessively when crossed by heavy traffic for which they were not originally designed. Many of the bridges will not stand a collision of a truck or car with a structural member. The majority of the bridges as in other counties were built during the "horse and buggy" days, narrow in width and incapable of withstanding today's heavy loads.

Cement shortage and costs hamper Canadian building

Shortage of cement is causing concern to engineers and contractors in Nova Scotia, New Brunswick and Prince Edward Island, Canada, the so-called maritime provinces.

There is no cement plant in the maritime provinces and cement must be brought in from Ontario and Quebec, or imported from the United States. A cement plant is to be established at Hillsboro, N. B., but it will not be completed before late in 1949.

Original plans to build another plant, at St. John, N. B., have not materialized.

Construction contracts, including housing jobs of from a dozen to 500 units, have been delayed because of the lack of the cement. The outlook is that contracts which had been expected to be completed before the cold weather will not be able to be finished until sometime next year.

MAJOR MEETINGS

Businessmen's Conference on Urban Problems, Hotel Statler, Detroit, Mich., Sept. 13-14.

Associated General Contractors of America, mid-year meeting of Governing and Advisory Boards, Edgewater Beach Hotel, Chicago, Ill., Sept. 13-15.

Building Officials Conference of America, annual meeting, Hotel New Yorker, New York City, Sept. 13-16.

Iowa Sewage Works Association, Hotel Kirkwood, Des Moines, Iowa, Sept. 14-15.

New England Water Works Assn., annual convention, Hotel Pennsylvania, New York City, Sept. 14-17.

Engineers and Architects Association, Hollywood Roosevelt Hotel, Los Angeles, Calif., Sept. 24-26.

American Institute of Steel Construction, annual convention, Chateau Frontenac, Quebec, Can., Oct. 4-7.

Concrete Reinforcing Steel Institute, semi-annual meeting, Grove Park Inn, Asheville, N. C., Oct. 5-9.

American Society of Photogrammetry, semi-annual meeting, Benjamin Franklin Hotel, Philadelphia, Pa., Oct. 7-8.

Southwest Section, A. W. W. Assn., Buccaneer Hotel, Galveston, Tex., Oct. 10-13.

Institute of Traffic Engineers, annual meting, Hotel Warwick, Philadelphia, Pa., Oct. 11-13.

Arizona Sewage & Water Works Assn., Hotel Westward Ho, Phoenix, Ariz., Oct. 15-17.

Federation of Sewage Works Associations, with annual meeting **Michigan Sewage Works Association,** Hotel Statler, Detroit, Mich., Oct. 18-21.

American Welding Society, annual meeting, Bellevue-Stratford Hotel, Philadelphia, Pa. Week of Oct. 24.

Wide World Photo

DIALING CENTER — Long distance calls through Chicago will be handled in the Illinois Bell Telephone Company's new 11-story steel frame structure, which was built and equipped at the cost of $12,000,000 by the George A. Fuller Co.

New Quebec railroad

(*Continued from page 6*)

Exploration and testing have been going forward at a rapid rate for the last two years in the Labrador-Quebec area on the 23,900 sq.mi. of concessions held in the Knob Lake area by the Hollinger subsidiaries—the Labrador Mining & Exploration Co., operating in Labrador, and the Hollinger North Shore Exploration Co in the adjacent area of Quebec.

At the end of 1947 the iron ore deposits, which were located through surface showings only, had been proved up to about 140,000,000 long tons of exceedingly rich ore which can be mined by open pit methods. The aim of this year's test drilling and surface trenching is to prove up an additional 160,000,000 tons on the same deposits, since a sure 300,000,000 tons of ore is regarded as the minimum to justify an expenditure that might well reach the $250,000,000 mark for railroad, docks, two towns to be built for employees and their families, a 50,000 hp. hydroelectric power plant, and the other installations that would be needed.

By the end of this year about $4.8 million will have been spent in the exploration work alone. The M. A. Hanna Co., Cleveland, holds a minority interest in the project along with the Hollinger concern.

MUNICIPAL AFFAIRS

Problems of water supply, anti-pollution programs, and sewerage led off the municipal news last week. A number of important projects had reached the contract stage, notably in the case of Philadelphia, where contracts have been awarded on two phases of the city's proposed $58,000,000 sewage disposal program.

Leo Butler Co. of Silver Spring, Md., with a low of $1,600,000, was the successful bidder to install the substructure for the Central Schuylkill pumping station and a siphon under the river bed. A contract was also signed for the construction of a blower building at the Northeast sewage treatment plant. The pumping station will be on the west side of the river, and the siphon tunnel—55 ft. beneath the river—will carry sewage from interceptors on the river's banks.

A study of the need for expanding the water works of Wilmington, Del., is to be made by the city's board of water commissioners, in an effort to meet rapidly growing demand.

More than the $3,350,000 already allotted for the sanitary sewer and water project of Daytona Beach, Fla., will be needed to finance the project. An alarming increase in the salt content of the city's water supply was one of five reasons listed by Russell and Axon, consulting engineers employed by the city, in explaining why current funds would not suffice.

In a report to Utilities Commissioner George A. Pierce, of Jacksonville, Fla., George B. Hills, consulting engineer, said that the city's water system is not adequate to the needs of its present and potential consumers. Improvements to the system included in the program drawn up by the engineers and submitted to council by city commissioners include 12 new wells, new aerators for six pumping stations, four ground-storage reservoirs, three new buildings and extensions to three existing buildings, 48.6 miles of new distribution lines, 14 miles of distribution lines constructed of salvaged materials, and cleaning of 42.7 miles of existing lines.

Latest developments in pollution matters in Ohio include the following:

Columbus is completing a $1,500,000 program to prevent further sewage pollution suits. The program includes new relief, sanitary and storm sewer lines costing $459,500, and new disposal facilities to be completed at a cost of $1,000,000. Both are financed by bond issues authorized in 1945. Most important of the sewage disposal projects is on the west bank of the Scioto River, where four large concrete grit settling chambers are nearly completed. The tanks will be capable of handling 160,000,000 gpd. They are adjacent to the city's master sewer line leading to the disposal plant, and will intercept its flow of 55,000,000 gpd. At present pollution suits against the city total $840,000.

Foster D. Roszman, of the Ohio Division of Conservation, estimates that 40,000,000 gpd. of untreated sewage are being dumped into the Maumee River. It is to prevent this that a Maumee Watershed Conservancy district is being approved.

When the Michigan Stream Control Commission filed suit against the city of Adrian, asking for an injunction to halt the discharge of raw sewage into the River Raisin, the city told the court that the state itself was polluting the stream with sewage wastes from an institution just outside the city limits, where about 400 persons are housed. Wastes are handled through a system of septic tanks, the effluent from which drains into the river. It was claimed that the institution's septic tank system has not been working properly in recent weeks and that raw sewage was going directly into the river. The state is asking that the city be forced to build an adequate disposal plant, charging that the present one is inadequate to handle the volume of sewage going through it.

N. Y. City public works

The New York City Board of Estimate, on Aug. 26 authorized bond issues totaling $36,649,000 to finance additional projects on the city's $200,000,000 program for low rental housing. For Colonial Park Houses, just north of the Polo Grounds in Manhattan, the sum of $11,180,000 was earmarked; and $5,379,000 was approved to finance Yorkville Houses, also in Manhattan; and $20,096,000 for Marble Hill Houses at the north end of Manhattan, extending into The Bronx.

The city is advertising for bids on the construction of the $7,000,000 Battery Park underpass, which is designed to link the east and west side waterfront highways at the southern tip of Manhattan.

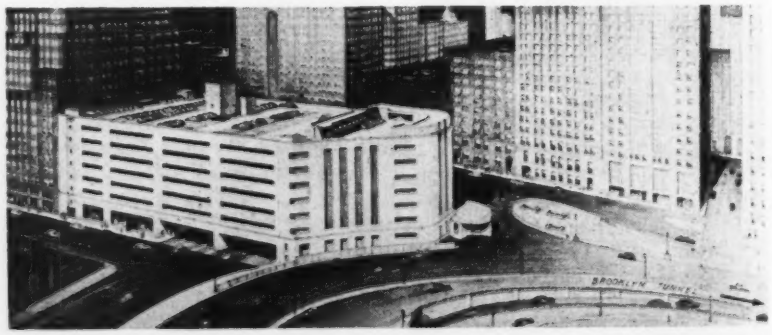
High construction costs have forced the city to reduce both the size and the scope of the proposed new ferry terminal at St. George, Staten Island. The estimated cost of the work under the new plans is $20,000,000, effecting a saving of $6,500,000 from the estimates originally made by the Department of Marine and Aviation.

Budget Director Thomas J. Patterson said Sept. 1 that the city will have $247,533,869 available for capital outlays through the end of 1949, but the continuing demands of existing projects are such that no new projects can be undertaken until 1951 without curtailing the current program.

Kansas City viaduct

Bids are being received this month for the demolition of buildings in the area of Kansas City, Mo., where the proposed $4,500,000 Southwest trafficway viaduct will be built.

About Oct. 1 the state highway department will take bids for the foundation work of the structure, which will start at 20th St. about Pennsylvania Ave., cross Southwest Blvd. and the Kansas City Terminal tracks and reach street level at Penn Valley park near 26th and Summit Sts. The work is expected to get under way early in November and continue through the winter. The highway department has already bought steel piles for the foundation supports.



CITY OWNED PARKING—Ground has been broken for New York City's first publicly-owned garage. Located at the Manhattan approach to the Brooklyn-Battery Tunnel, the facility it is said will accommodate more than 1,000 cars and cost about $3,500,000.

New street light idea

St. Paul, Minn., has awarded a $93,493 contract to the Commonwealth Electric Co. of that city to furnish and install street lights on buildings on 6th, 7th, Wabasha and Robert streets in the central business district where the streets are 60 ft. wide. The purpose of the "wall luminaires" is to make it possible to remove the present street lamps on posts, thus increasing sidewalk space and giving the effect of a wider street. The street railway company, where it has car tracks, has already removed trolley poles and attached the wires to adjacent buildings along the route.

Traffic and parking

As the result of a traffic survey of Seattle, Wash., by the state highway department and the Public Roads Administration, a municipal parking authority has been recommended.

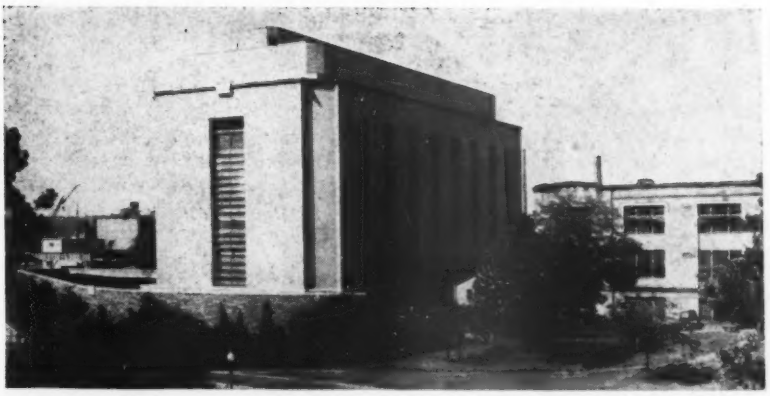
More than 200,000 vehicles entered or left the downtown district in an average business day, and 40,000 did not stop and could have by-passed the district if adequate highways were available, the survey found. The report said that 2,400 additional parking spaces are needed. It was also recommended that the building code be amended to require new buildings to provide off-street parking.

St. Petersburg, Fla., has one of the largest municipal parking lots in the Southeast; West Palm Beach has gone in for an extensive system of waterfront parking lots; and Tampa would like to carry out the same idea if it can get favorable action by the legislature such as that obtained by Miami to ease that city's traffic congestion and parking problems.

In Louisville, Ky., much downtown traffic congestion is caused by routing and street facilities which force drivers through the business district when they are going from one part of the city to another. That was one of the results shown by a recent count of 93,781 vehicles to and from the central area. Carl Berg, planning engineer for the Louisville Area Development Association, is working with the state highway department to get more complete information to be the basis for recommendations to meet traffic demands of the future.

The planning board of Trenton, N. J., is looking into the need for a parking authority in that city, such as has been created in neighboring New Brunswick as the result of a recent New Jersey law giving cities the right to establish such bodies.

Wayne, Mich., is about to construct a 600-car municipal parking lot. Logansport, Ind., is planning to install 650 parking meters. The city planning commission of Marion, Ind., is studying a proposed thoroughfare plan which provides for primary streets and highways for traffic with an origin and destination outside of the city, secondary thoroughfares for local through traffic; and tertiary arteries to provide major means of access from one section of the city to another. Establishment of a city-owned parking lot at Richmond, Va., is virtually assured by favorable action of the board of aldermen.



CENTRAL HEAT FOR WASHINGTON—Built by the Public Buildings Administration of the Federal Works Agency (ENR, Jan. 1948, p. 14) the West Central Heating Plant at 29th and K Streets, N. W., is now practically complete. It will serve public buildings in the national capital, supplementing the heavy heating load which has been carried by the Federal Central Heating Plant built in 1934. Work on the plant was started in Feb., 1942, but was suspended almost immediately on account of the war, and was not resumed till Feb., 1946. The 5-story building is of steel construction with brick exterior curtain walls. Water tube boilers were furnished by Henry Vogt Co. and water cooled stokers by the American Engineering Co., turbo-generators by Murray Iron Works and generators by Allis-Chalmers. The fuel is coal. Each boiler has a normal operating load of 220,000 lb. of steam per hour. The working steam pressure is 250 lb.

Cooperative planning

A planning program, said to be the first of its kind in New York State, has been launched by five towns and one village in the northern part of the populous Westchester County. The towns of North Castle, Bedford, Poundridge, Lewisboro and Somers and the village of Mount Kisco will coordinate their controls of future subdivisions, highways, airports and other phases of community development.

Boston plans truck depots

The Boston, Mass., Planning Board plans to eliminate unnecessary truck traffic and obtain cheaper freight handling charges by providing three truck terminals at an estimated cost of $27,000,000. Representatives of the board testified before the State Legislative Committee on Transportation in favor of setting up a Truck Terminal Authority to aid in plans of this kind.

Thomas E. McCormack, director of the planning board, declared the plan would parallel present off-street parking in relieving streets of unnecessary traffic. Under the plan, terminals would be exempt until debt free, and the authority would have the right of eminent domain. No homes would be confiscated for erection of terminals. J. E. Baril, city engineer, estimated a gross saving of $800,000 annually would result in Boston through cheaper handling of freight.

Water main leaks costly to Defiance, Ohio

Defiance, Ohio, is losing thousands of dollars annually in revenue through leakage in water mains and slow meters of its municipal waterworks system, according to a report of R. D. McGill, chief water engineer of the H. C. Nutting Co., Cincinnati.

The report said that in the central district leakage was found to be 65 per cent of the total water consumed. Service Director A. R. Batt pointed out that savings as a result of finding leaks far exceed the $1,200 spent in making this survey.

One of the largest leaks was reported in a 10-inch main in Second St., which was said to be losing 107,000 gpd. Temporary repairs have been made.

Wide World Photo

FOR EXPRESS TRAFFIC—New Passaic Bridge will help bring New Jersey motorists 20 to 30 minutes closer to mid-Manhattan. Steel bridge work is well under way on the superhighway due to open next summer.

Group studies profession at annual convention

Delegates from 38 states and representatives of ten leading national engineering societies attended the 27th annual meeting of the National Council of State Boards of Engineering Examiners held at Salt Lake City, Utah, August 26-28.

Committee reports presented to the convention covered such subjects as uniform laws and procedures, qualifications for registration, registration by endorsement, engineers-in-training, effects of registration and land surveying.

Newly-elected officers of the National Council are: Alexander Blair of Lake Placid, Fla., president; Clarence Eckel, Boulder, Colo., vice-president; T. Keith Legaré, Columbia, S. C., re-elected secretary.

Plans were discussed at the Utah meeting for the 1949 annual convention to be held at Daytona Beach, Fla.

Record 1948 road building seen by ARBA head

America's highway construction program should reach an all-time high in 1948, Charles M. Upham, engineer-director of the American Road Builders' Association, said last week. He foresaw a $1,750,000,000 volume for 1948.

"October is our peak construction month," declared Mr. Upham. "In October, 1946, $100,000,000 was spent in road building. In October, 1947, the amount rose to $178,000,000. At this rate, October, 1948, should show a total expenditure of $250,000,000.

"According to the Federal Works Agency, contracts by state highway departments for the first five months of 1948 amounted to 38 percent more than the corresponding period of 1947. Federal aid contracts awarded in May of this year were 30 percent higher than those awarded in May, 1947. State highway contracts awarded in May, 1948, were 31 percent above those of May, 1947, and total highway contracts at all government levels for May, 1948, were 41 percent over those of May, 1947.

U. S. devises quake warning apparatus for west coast

A forecasting system to warn residents of Pacific coastal areas of the danger of destructive waves caused by submarine earthquake has been devised by the U. S. Coast and Geodetic Survey, according to Secretary of Commerce Charles Sawyer.

Called a "seismic sea wave warning system," this device is an outgrowth of the 1946 tragedy in which 173 people lost their lives and $25,000,000 worth of damage was done at Hilo, Hawaii, a point about 2,250 miles from the center of a sea quake—earthquake under the sea.

The warning system will combine a seismological service and a lookout service for observing the actual approach of waves.

H. C. Whitehurst dies; D. C. Director of Highways

Herbert C. Whitehurst, 61, director of highways for the District of Columbia for the last 18 years, died Sept. 1 at Washington, D. C. He had been associated with district highway construction for 23 years. He was graduated from the Virginia Polytechnic Institute in 1906 and worked as an engineer with private construction firms until the first world war. Commissioned in the Army Engineers, he served in this country and abroad. Continuing in the service after the war, he went to Alabama as chief of the construction division at Wilson Dam.

Captain Whitehurst was appointed assistant engineer commissioner for the District in 1925, but left in 1929 to take a position in private industry. Just before leaving, he submitted a report streamlining the highway construction program for the District. The report called for creation of a coordinator of highways. After the commissioners had studied the report, they asked him to accept the new position. Later, he became director of highways when that post was created in 1930.

Sponsored surveys

As coordinator of highways, he sponsored surveys of traffic conditions in cooperation with the Public Roads Administration and instituted a long-range program of street widening and surface improvement. During World War II he served as civilian defense director and commander of the Civilian Defense Corps of the District of Columbia.

Under his direction, numerous highway projects, including the Scott and Thomas Circle underpasses and the John Philip Sousa bridge, were completed. At the time of his death he was supervising numerous major projects, including the K Street elevated highway, the new bridge across the Potomac at Fourteenth Street, the Dupont Circle underpass, and the South Capitol Street bridge project. These represent the completion of an eight-year construction program suggested by Captain Whitehurst in 1941, when he submitted the first report of the Highway Planning Survey, which he set up.

Correction

In its issue of Aug. 26, on page 13, *ENR* erroneously reported that Theodore O. Blaschke had joined the firm of Strobel and Salzman of New York City. Mr. Blaschke left that firm some time ago, and is now associated with Parsons, Brinckerhoff, Hall and MacDonald, also of New York.

Plan $11-billion school construction

An increase of 7,100,000 in total school enrollment during the seven years 1947-54 calls for an investment of $11,000,000,000 at November 1947 prices —in new plant and equipment. The Federal Security Agency last week summarized the substantiating figures for this conclusion.

From November, 1947, to August, 1948, the *ENR* building cost index went up 8 percent. Thus, it is safe to say that the estimate of last November would be $12,000,000,000 today.

By type of facility, $9,200,000,000 of last November's $11,000,000,000 would go into construction—86 percent in new building and additions and 14 percent for remodeling and rehabilitation. The total for construction is 84 percent of the overall figure. November's gross estimate included $600,000,000 for sites and $1,200,000,000 for equipment.

This total amount—upped to $12,000,000,000 today—represents the need between now and the fall of 1954 to replace or modernize unsafe and obsolete facilities and to take care of present and predicted enrollments. Total enrollment for the 1947 school year—in all types and grades of educational institutions—was 30,800,000. The predicted enrollment for 1954-55 is 37,900,000. Increased enrollment in public elementary and secondary schools alone will require more than 200,000 additional classrooms.

Distinct trends in school planning, FSA noted, point toward: (1) functional buildings to house both educational and community programs, (2) larger sites for recreation, (3) larger teaching areas, (4) facilities for storage and use of supplies and instructional aids, better lighting conditions, (6) one-story open-type plans rather than massive structures, and (7) flexibility for adapting schools to changing conditions.

Shakeup in AEC favors atom power progress

Lag in atomic power development is the underlying cause of the current shakeup in the management staff of the Atomic Energy Commission. The biggest change brings into being a new reactor (atom-pile) division to take complete charge of power development.

Both industrial and military critics have challenged the AEC's emphasis on bomb-making as contrasted with atomic power work. Recent bringing to Washington of Carleton E. Shugg, former manager of Hanford Operations, to become deputy to general manager Carroll L. Wilson, signified a fundamental change in AEC's administrative organization. Mr. Wilson's tenure in his present position is said to be uncertain. Only two of AEC's five major division heads are expected to continue in their jobs.

Strongest criticism has come from the Air Force and the Navy, both of them irate over lack of help in developing atomic engines for planes and ships. Defense Secretary Forrestal last June demanded that AEC give more help to two research and development undertakings: (1) the Fairchild-Air Force project—nuclear energy for propulsion of aircraft, and (2) the Westinghouse-Navy program—nuclear energy for propulsion of ships.

The Navy's Bureau of Ships has written Chairman Lillienthal that its NEPS project proposes to cut loose from AEC. Further, the admirals now are prodding Secretary Forrestal to demand that AEC turn over to the Navy its Knolls power laboratory, operated by General Electric at Schenectady.

Commenting on the recent appointment of Mr. Shugg, Wilson said that it would bring other industrial experience and direction into the headquarters organization. Changes in assignment of headquarters staff duties, he declared, will fix responsibility more precisely in each major phase of the AEC program and will simplify the organizational structure of the commission's main office, located by law in Washington.

Contracts awarded for 2d Hetch Hetchy aqueduct

Two contracts totaling $7,474,780 were awarded recently on the construction of a second Hetch Hetchy Aqueduct. The line will parallel an existing line (*ENR* July 10, 1947, vol. p. 49) and add 17 mgd. to San Francisco's water supply.

P. and J. Artukovich of Los Angeles will lay 21½ miles of steel pipe on a bid of $5,296,519. The second contract was won by the United Concrete Pipe Corp. of Los Angeles to build a concrete pipe section nearly 11 miles long.

James H. Turner, manager of the California Public Utilities Commission, estimated that the new pipeline would assure enough water for San Francisco's needs for the next four years.

He pointed out that current water consumption is almost 110 mgd., which is nearly equal to the amount now available from Hetch Hetchy and nearby sources.

The steel pipeline will be built from Oakdale to the San Joaquin River, and the concrete pipe will carry the water from the west bank of the San Joaquin to Tesla Portal.

Cement price decision held wrongly interpreted

Corwin Edwards, chief economist of the Federal Trade Commission, declared last week that the commission's stand with respect to the basing-point system of fixing cement prices was widely misunderstood and that the U. S. Supreme Court's decision in the cement price case (*ENR* April 22, vol. 6, 622) had been misinterpreted as banning the basing-point system or freight absorption by a cement company in order to compete for business. All that the court decision bans, he said, is collusive price fixing.

Contending that the decision bans neither freight absorption nor the quotation of a delivered price, Edwards said:

"There is no instance in which the commission has charged that a single company using a basing-point system without regard to what its competitor is doing is in violation of the Federal Trade Commission Act."

He further stated that "in the cement case the proof of collusion did not rest on the basing-point system alone, but also upon . . . various other types of evidence."

AGC meeting at Seattle finds delays cost money

In a recent meeting at Seattle, Wash., the joint cooperative committee of the National Association of State Aviation Officials, and the Associated General Contractors of America, concluded that contractors should be paid more promptly for work completed on federal-aid airport construction projects. This and other eliminations of delays should, according to the committee, greatly reduce construction costs.

A resolution calling for insertion in contracts of provisions to expedite payment to contractors, was passed by the committee. The committee further recommended that partial payments be handled much more promptly.

The delay that has occurred between opening bids and awarding contracts in some cases was found to be as much as 90 days. This was cited as another costly delay during which payment to the consulting and design engineers was held up, and the picture as to delivery of materials and supplies was confused.

MEN AND JOBS

James D. Gregg, consulting engineer, has been named for a 2-year term to arrange a master plan for Ironton, Ohio. With the rapid growth of the city since the war, city officials felt the need for a systematic plan for municipal improvement. The increase in industrial plants was attributed partly to the city's floodwall, built after the 1937 flood, which has protected the city several times.

C. Marshall Jones of Sacramento, Calif., engineer with the Bureau of Reclamation, has been appointed engineer in charge of project planning in the Sacramento Valley district. He will have charge of a survey of the water development of the Feather River, studying the potentialities of three reservoir sites, one seven miles above Oroville, the Bidwell Bar site, near the junction of the Middle and South Forks of the Feather River, and the Big Bend site, above Las Plumas on the North Fork.

The new name of the firm is **Parsons, Brinckerhoff, Hall & Macdonald** and its offices have been moved to 51 Broadway, New York City.

Engineering isn't what it used to be, thinks Prof. C. E. Sandstedt of Texas A & M as he talks to two girl civil engineer graduates during the recent Seattle ASCE convention. Lucy Wilson (left) an alumna of the University of Texas, is designing irrigation structures for the Bureau of Reclamation in Great Falls, Mont., and Ruth Gordon, from Stanford University, is in the structural design section of the Seattle city engineering department.

Short courses in highway engineering are being conducted at the University of Florida in cooperation with the state road department, trainees being full time engineering employees of that department. Pictured above is one of the classes under the supervision of Asst. Prof. R. J. Paquette. Left to right are: 1st row, J. A. Smith, J. W. Ewing, E. K. Martin; 2nd row, E. A. Cox, Jr., W. N. Cox, N. S. Burns, Jr., H. V. Aiken, W. M. Girardeau; 3rd row, T. J. Isler, J. D. Cooke, J. T. Durham, A. S. Elton.

Stanley H. Wright, until June 30, 1948, head of a group of engineers with the estimates division, Bureau of the Budget, has now joined the staff of the engineering division, Atomic Energy Commission.

Carleton Shugg has been promoted to deputy general manager of the Atomic Energy Commission from his former post as manager of operations at Hanford, Wash. A Naval Academy graduate in 1920, with three years of postgraduate study there and at MIT, Mr. Shugg had been factory and production manager of a Sprague Electric Co. plant in Massachusetts, had supervised construction and production for a new yard of the Cramp Shipbuilding Co., Philadelphia, and had served as general manager of the Hoboken and Brooklyn divisions of the Todd Shipyards Corp., New York. **Fred C. Schlemmer,** of Chattanooga, Tenn., succeeds Mr. Shugg at Hanford. He has had 30 years experience in engineering and construction management. As a member of the Tennessee Valley Authority staff from 1933 to 1946, he supervised construction and at various times managed the building of Fontana, Norris, Chickamauga and Watts Bar dams and the Watts Bar steam plant. Earlier, he had worked with the J. G. White Engineering Corp., New York, as an engineer on the World War I development at Muscle Shoals. In 1946 he went to India as engineering consultant for the Indian Government.

Rodney D. Brown, chief of the primary road division in the Department of Design, Public Roads Administration, Washington, D. C., has retired to

Corps of Engineers photo

Col. B. L. Robinson, District Engineer of the Galveston District, Corps of Engineers, under whose direction Addicks Dam is being constructed to protect Houston and its environs from floods, is a West Point graduate and served as a brigadier general during the war. In the Pacific he participated in seven campaigns and also in two D-day landings.

Mount Upton, N. Y. His government service began in 1913, following his graduation from Cornell University with a civil engineering degree. After four years with the Forest Service, he joined Public Roads in 1917, became assistant to the chief of the design division in 1931, and in 1944, when the primary roads division was created in the new department of design, he was made its chief.

William N. Evans, project manager for National Constructors, builders of the Allatoona Dam near Cartersville, Ga., has been appointed general manager of the L. E. Dixon Construction Co., of Los Angeles. The Dixon firm, together with Hardaway Construction Co., of Columbus, Ga., and the Smith Construction Co., of Baltimore, make up National Constructors.

George D. Felix, Staunton district engineer, is taking over the newly created position of assistant right of way engineer of the Virginia Department of Highways. **S. D. Crute,** resident engineer at Amherst, will succeed Mr. Felix and **W. M. Jeffress,** assistant resident engineer, will succeed Mr. Crute. **S. C. Liggett** transfers as resident engineer from Staunton to Harrisonburg, **W. W. Shields** goes from Harrisonburg to Charlottesville, and **R. Cary Ambler** from Charlottesville to Staunton.

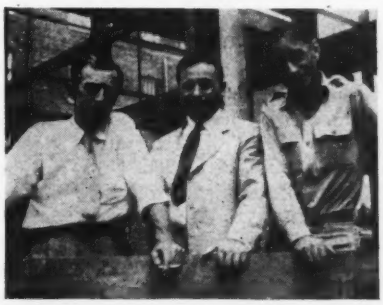
George K. Mack, of Ahoskie, N. C., North Carolina State Highway district engineer in charge of maintenance in Bertie, Hertford, Martin and Northampton counties, has been transferred to Elizabeth City, N. C., as district engineer in charge of the first district, comprising Camden, Chowan, Currituck, Dare, Gates, Pasquotank and Perquimans counties. He succeeds **R. R. Roger,** who has been placed in charge of the construction of the Masonboro bridge and other construction work. Succeeding Mack at Ahoskie is **J. C. Parkin,** formerly resident engineer on construction.

Talk by Paul J. Raver, Administrator, Bonneville Power Administration, highlighted a luncheon session of the recent ASCE convention in Seattle which was attended by about 400 engineers and guests. Prof. Fred. H. Rhodes, Jr., of the University of Washington, general chairman of the convention, seated at the speaker's left, kept the program running on schedule.

Albert James Harns, Jr., has been named technical adviser to the Farrell Steamship Co., New York. He attended the college of engineering, University of Illinois, and was graduated from Massachusetts Institute of Technology.

Manton E. Hibbs, 81, chief engineer of the Philadelphia, Pa., Bureau of Building Inspection, is retiring after nearly 49 years of service. He assisted in preparing the present municipal building code, adopted in 1927, and helped draft the new building code now before the city council. He was graduated from the University of Pennsylvania in 1888, receiving his bachelor of science degree in engineering, and then took postgraduate work. He became a city building inspector in 1899, later an engineer. He was named chief engineer of the bureau when the position was created in 1929.

New officers of the Western Association of State Highway Officials elected at the recent Portland, Ore., conference of the association are, in the usual order, President, W. C. Lefebvre, Arizona state highway engineer; vice-president, W. T. Holcomb, Nevada state highway engineer; and secretary-treasurer, W. C. Williams, assistant state highway engineer.



Watching construction of the new Mt. Sinai Hospital in Hartford, Conn., are, left to right, R. Rogers, construction superintendent; A. J. Macchi, structural engineer; and H. R. Sandersen, resident engineer.

Supervising a million-dollar cofferdam and excavation contract held by United Construction Co., Winona, Minn., for the Corps of Engineers' new hydroelectric power plant at the Soo are (left to right): A. J. Ross, night superintendent; W. G. Buehler, general superintendent; and H. M. Wolpers, civil engineer.

Gunnar Solderberg ended nearly 31 years of city employment in Akron, Ohio, on Aug. 6. He had been in the city highway department since 1918 and city highway engineer since 1939. His first assistant, **Iver C. Smith,** will take over the job until a successor is named.

Joseph L. Burkholder, chief engineer and general manager of the San Diego County, Calif., Water Authority, has been cited by the Kansas University Alumni Association. He was graduated from the university in 1908. His work other than that of his present position includes supervisor of construction of the main Colorado River acqueduct for the Southern California Metropolitan Water District, senior engineer for the United States-Mexican International Boundary Commission, and supervisor of construction of Horseshoe Dam, Ariz.

ENGINEERING SCHOOLS

Re-organization at Georgia Institute of Technology—New entrance requirements at McGill—New courses at N. Y. University—Faculty and administrative changes

Sweeping reorganizations at the Georgia Institute of Technology authorized by the Board of Regents have been announced by President Blake R. Van Leer. Effective Sept. 1, 1948, these changes were forecast when Georgia Tech changed its official name from Georgia School of Technology to Georgia Institute of Technology. At that time 22 different departments and divisions reported directly to the president. This number has now been decreased to eleven. A new office, that of vice-president in charge of research, extension and construction, will be filled by Dean Cherry L. Emerson. He will have charge of the engineering experiment station whose director is G. A. Rosselot; of the enginering extension division, whose director is Prof. R. S. Howell; the buildings and grounds division under the direction of J. R. Jenkins; and the new construction division under the charge of Campus Engineer Russell A. Smith.

The undergraduate work is now divided into two colleges. The general college, whose dean is Ralph Hefner, and the college of engineering whose new dean is Jesse Mason, both will report to the new dean of faculties, Lloyd W. Chapin, who will also supervise the cooperative division, the Army, Navy and Air Force R.O.T.C. units, and the graduate division, whose dean is Ray L. Sweigert.

All degree granting departments have been given the designation "Schools," and their chief executive officers are designated as directors. These are: Daniel Guggenheim School of Aeronautics—Prof. D. W. Dutton, director; School of Architecture — Prof. Harold Bush-Brown, director; School of Ceramics—Lane Mitchell, director; School of Chemical Engineering—Paul Weber, director; School of Civil Engineering—Prof. T. H. Evans, director; School of Electrical Engineering—Prof. D. P. Savant, director; School of Industrial Engineering—Prof. F. F. Groseclose, director; School of Mechanical Engineering—H. S. Weber, director; A. French Textile School—Prof. H. A. Dickert, director; School of Industrial Management—Prof. H. E. Dennison, director; School of Physics—J. H. Howey, director; and School of Chemistry—P. K. Callaway, director. The department of engineering drawing and mechanics has been made into a division with Prof. W. B. Johns as director.

Entrance Requirements

Higher entrance requirements for civilians in McGill University's engineering department, put into force during the period of congestion caused by the influx of veterans, have now been cancelled. The change, which takes effect immediately, is brought about by the reduced number of servicemen and women who are expected to seek admission to first year engineering in the future. Now, all categories of students are on the same admission basis.

New Courses

This month the graduate division of New York University college of engineering will inaugurate a new course called "Effect of Temperature on Materials of Construction." It will be given by Associate Prof. J. P. Nielsen and Adjunct Prof. H. H. Hausner of the chemical engineering department. It will present the principles that govern the behavior of metals and nonmetals subjected to certain temperature ranges and to study the techniques used.

Elevated temperatures, from room temperature to about 500°C will be studied with a survey of the suitable materials of construction. Temperatures, 500°C and above also will be considered, with special emphasis on high temperature alloys and ceramics.

The graduate division will start also a course in preparation of management, engineering, and business reports. J. D. East of the Air Reduction Co., adjunct professor of administrative engineering, will give the course. Included will be tabular, graphic, and visual aids to presentation, and special problems of executive reporting.

Faculty Notes

Allen S. Janssen, dean of the college of engineering at the University of Idaho, has been given a three months leave of absence to serve as a civilian technical adviser at the Naval Construction Battalion Center, Port Hueneme, Calif. Prof. Norman F. Hindle will serve as acting dean during Dean Janssen's absence.

D. M. Wiggins, former president of Texas school of Mines, El Paso, has become president of Texas Technological College, Lubbock, Tex., and Edward N. Jones, president of Texas College of Arts and Industries, Kingsville, is now vice-president of the Lubbock institution. Dr. Wiggins succeeds Dr. W. M. Whyburn, who has joined the faculty of the University of North Carolina.

Eugene G. Pare, associate professor of technical drawing and descriptive geometry, has been appointed assistant dean of students at Illinois Tech.

Andrew B. Hargis, for the last ten years supervising engineer of the department of buildings, grounds and utilities at the University of Mississippi, has resigned to return to the school of engineering as professor of civil engineering. Formerly he had been dean. In a reorganization, Harold E. Haney, graduate civil engineer and formerly assistant supervising engineer for the university, and Fred W. White, graduate electrical engineer, have respectively been appointed superintendent of buildings and grounds and superintendent of utilities.

Mario G. Salvadori, assistant professor of civil engineering at Columbia University, has been named the representative of the American Society of Civil Engineers and the University to the seventh International Congress for Applied Mechanics, in London, Sept. 5-12.

A NEW HYDRAULIC LABORATORY at the State University of Iowa will soon double the facilities of the Iowa Institute of Hydraulic Research.

Clever design ana erection speed Texas fair structure

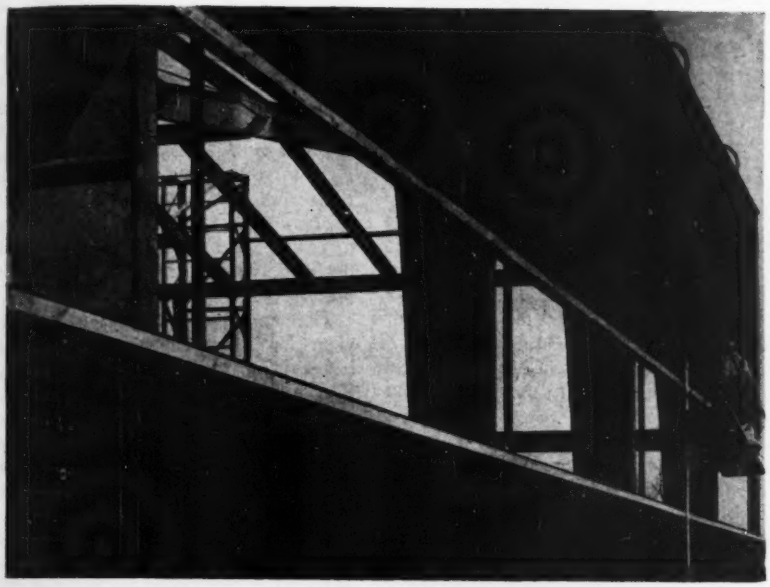
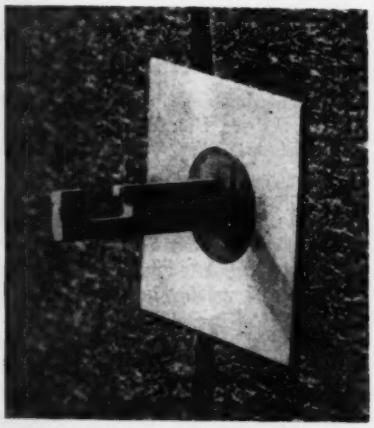


EXHIBIT BUILDING at Texas fair grounds is rigid frame structure with gunite walls. Lath work above is completed and ready for gunite coating.



NEW TYPE STUDS hold both insulation board and welded wire fabric.

GUNITE WALL is built up with insulation board as backing.

Speedy erection of the $800,000 Automobile and Aviation Building at the Texas State Fairgrounds in Dallas, scheduled for dedication on Oct. 9, opening day of the fair, is due in large part to the simplified design and ingenious method of erecting the exterior walls.

Enclosing 84,000 sq. ft. of floor area, the building has a steel rigid-frame roof structure with light-gage steel framing between columns. The exterior wall is made up of ⅞-in. insulation board, 1¾-in. of gunite concrete reinforced with 4 x 4 in. No. 8 x 8 welded wire fabric, and finished with ¼-in. of silica sand and white cement mortar.

New type stud

Insulation board and welded wire fabric are held securely in place with a newly developed type of metal lath stud that was welded to the columns and to the steel framing.

These studs are spaced at joints in the insulation board, which is held in place with 2-in. sq. steel washers, and locked with speed clips. Smooth ¼-in. steel rods are inserted horizontally in slots at the ends of the special studs and locked in place by closing the slats with a few blows of a light hammer.

The welded fabric then is wired to the rods and the 1¾-in. of gunite concrete is applied over the wire mesh, using the insulation board for backing. Final finish of the sand-cement mortar is applied after the gunite concrete has cured for three weeks.

Contractor on the job is the M. & M. Construction Co. of Dallas, which built the upper portion of the walls from a job-made, truck-mounted timber scaffold. The lower part of the walls was erected by laborers working on the ground.

FINAL EXTERIOR FINISH of the building wall is ¼ in. of white cement-sand mortar applied to three-week old gunite concrete. Inside the building the insulation board has a coat of aluminum paint and left exposed.

Justice department ruling validates voluntary materials allocation plans

Agreements for distribution of steel and iron products permitted for year under decision—Much of program already under way

The U. S. Department of Justice has ruled that voluntary industry allocation agreements can continue in effect until Sept. 1, 1949, if the participating firms desire, under the present Taft act—Public Law 395. The Commerce Department had been waiting for a written opinion on this point.

As things stand now, the Office of Industry Cooperation in the Commerce Department can sponsor agreements until Feb. 28, when this function of the law expires, but the allocations can continue for another six months, if the signatory industries so wish. There is a possibility that the next Congress, meeting in January, will continue the voluntary allocations program another year beyond Feb. 28 (*ENR* Aug. 19, P. 73).

In the few months of its existence, the Voluntary Industry Allocations Program has earmarked 10 percent of total finished steel and 25 percent of the country's merchant pig iron to eleven segments of consuming industry.

Under the act, industries critically short of iron or steel can appeal to OIC for allocation of materials which would enable them to keep up with the demand for commodities important to the national welfare—freight cars, defense materiel, fuel, housing, and raw materials. Allocations can be worked out, according to the law, providing the set-asides do not seriously dislocate the long-standing distribution machinery.

Not too much more iron and steel will be set aside, however, OIC officials indicate that the steel industry's distribution system will not stand much more siphoning before it is knocked out of joint. The steel people figure that "10 percent is plenty", particularly when output of finished steel this year will reach 66,000,000 tons, about 3,000,000 tons over last year.

In addition to the 11 allocations agreements already worked out, the commerce department has also helped tag sizeable quantities of several steel commodities for programs outside the scope of P.L. 395, particularly the Greek-Turkish aid program (56,000 tons of steel shapes) and the European food pack program (452,000 tons of tinplate).

Commerce Secretary Charles Sawyer estimated, before the Senate Banking and Currency Committee about a month ago, that exports of steel mill products to ECA countries would approximate 2,300,000 tons during fiscal 1949. He also stated that exports of non-ECA countries would total about 3,680,000 tons of mill products.

Adding OIC's allocations set-aside rate (5,764,000 tons annually) to the export and foreign aid estimates, brings the total of "programmed" steel mill products to 12,252,000 tons, or 20 percent of the U. S. output.

Voluntary allocations of finished steel products are going to the following on an annual basis:

Freight car builders—3,000,000 tons.
Atomic energy commission building program—160,000 tons (in eight months).
Warm air heaters for housing—350,000 tons.
Prefabricated steel houses—59,000 tons.
National defense (military)—1,230,000 tons.
Oil field tank and well-head equipment—198,000 tons.
Inland waterway barges—240,000 tons.
Maintenance and repair for anthracite coal mining—31,000 tons.
Research projects of the national advisory committee for aeronautics—16,000 tons.
Ocean-going tankers, new and repair work—480,000 tons.

Of the commodities which come under the heading of "finished steel products", steel plates will be the most heavily drawn down by the OIC voluntary program. At present it is indicated that about 30 percent of the production of this item is being or will be allocated by late in the year. Least affected are wire products and rails.

Challenge weight limits on Pennsylvania roads

The state's authority to restrict the use of highways in order to protect them is at stake in legal actions pending before the Dauphin County Court in Pennsylvania.

C. I. Taylor and William R. Shumaker, Allegheny County strip mine operators, in separate suits have challenged the right of Highways Secretary Ray F. Smock to place an 8-ton weight limit on roads leading from their mines. They claim in cases now awaiting argument that the restriction prevents them from using their present equipment to haul bitiuminous coal to market.

Smock imposed the limit on these and other western Pennsylvania roads under authority granted in the State Highway Code. He acted after highway department engineers reported many light roads were being destroyed by heavily loaded trucks.

"It is the first time anyone has challenged the secretary's authority," Harry L. Stambaugh, special deputy attorney general, said. "It is a test of the state's right to restrict the use of some roads to prevent their destruction."

Stambaugh, along with Deputy Attorney General Philip Lewis, is defending the discretionary weight restriction powers.

The state contends the rural roads were never constructed for anything heavier than farm-to-market traffic and that heavy trucks are making deep gutters in the road.

One witness testified that the trucks used by the coal operators weigh more empty than the state's weight limit. Loaded, they weigh 18 to 20 tons.

The highways department reported many of the lighter roads have weight restrictions which will be affected by the outcome of the present court actions.

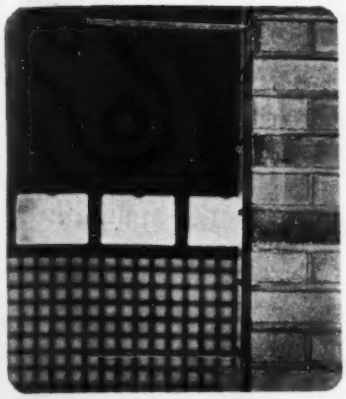
FHA to sponsor national low-cost housing talks

Commissioner Franklin D. Richards of the Federal Housing Administration announced last week that a series of nation-wide industry meetings will be held during September under the auspices of the National Association of Home Builders and FHA. Their purpose is to stimulate and further the construction of housing in the lower price range.

Tentative dates have been set for Sept. 14, 15 and 16. The industry meetings will review significant changes in FHA mortgage insurance under the new law passed by the recent special session of Congress (*ENR*, Aug. 12, p. 3). All segments of industry affected by the housing act are invited.

Topics for discussion include revisions in FHA regulations for mortgage insurance on small homes under Section 203 of the National Housing Act, new provisions for rental housing under both Section 608 and Section 207, and the incentives to site fabrication on large-scale projects of single-family homes under Section 611. In addition, the meetings will discuss provisions of Section 609 (insurance of working capital loans to finance the cost of manufacturing houses) and 610 (insurance of loans for the purpose of properties acquired or constructed by the government), as well as Title I (small homes and property improvement loans) and Title VII (yield insurance).

Glass block installation, step by step



1. GLASS BLOCK PANELS may be held by 24-in. metal anchors that extend 12 in. into horizontal mortar joints, if the panel is less than 100 sq. ft. and not wider than 10 ft.

2. OR EDGES OF THE PANEL may be set in chases that are at least 1½ in. deep. Continuous expansion strips should be installed at jamb and held in place by gobs of asphalt emulsion.

3. AFTER THE EMULSION HAS SET, the sill should be buttered with mortar and the first blocks laid in the chases at each side of the opening. Mortar should be crowned slightly.

4. REINFORCEMENT by welded wire ties 3 ft. long. With 6-in. block, ties are needed in every fourth horizontal course; with the 8-in. block, every third course; 12-in. block, every course.

5. PANEL ANCHORS, when used, should be crimped to allow for expansion. When the anchor is not in line with the mortar joint, the anchor should be bent up or down to fit.

6. BEFORE THE LAST COURSE of block is laid, expansion strips should be stuck to the underside of the lintel, but clearance must be provided to allow for lintel deflection.

7. THE LAST BLOCK should be buttered on one side only and carefully slipped into place—usually a two-man job. Then, the last vertical joint should be tuck-pointed with mortar.

8. BEFORE THE MORTAR has set, joints should be tooled back to the small lip at the end of the block and finished to a smooth concrete surface. The panel then should be cleaned.

9. CALKING should be gunned or knifed to a depth of at least ⅜ in. into the jambs (after loose mortar has been removed from these spaces) and oakum rammed tightly into them.

(Pictures from the movie, "Mortar and Glass" by American Structural Products Co., Toledo, Ohio)

Relief for Limited Budgets

This Model W-Speed Patrol handles regular maintenance and light construction for a fraction of the cost of large motor graders. Enables you to spread your upkeep dollars over more miles of roads and streets. And you get IMMEDIATE DELIVERY!

- Engine—31 brake hp.
- Weighs 5,960 lbs.
- 10 ft. blade — adjustable pitch
- Electric lights and starter
- Blade pressure 4,780 lbs.
- Short turning radius for narrow roads, streets and alleys
- Averages about one gal. of fuel an hour
- Works at 3 to 5 m.p.h. — travels up to 10 m.p.h.
- Drawbar always free

OBITUARY

William E. Bailey, 58, district engineer at Hollidaysburg, Pa., and formerly a state highway district engineer at Harrisburg, Pa., died at Altoona, Pa., Aug. 26. He had joined the department in 1907.

John H. Tomlinson, 84, formerly an engineer for the New York City building inspection bureau for many years, died at Yonkers, N. Y., Aug. 28.

Francis W. Mahoney, 65, president of W. F. Mahoney and Associates, Boston, Mass., engineers, died Aug. 23 in Dorchester. He was a graduate of Amherst College.

Joseph A. O'Brien, 69, head of the flood and stage records department in the office of the St. Louis, Mo., district engineer, United States Corps of Engineers, died Aug. 24.

John Joseph Walsh, 54, an engineer with the Cook County Highway Commission for ten years, and previously with the Illinois State Highway Commission for eight years, died Aug. 27.

Henry L. Fruend, 63, formerly an engineer with the Tenessee Valley Authority, died at Punta Gorda, Fla., on Aug. 12 He was graduated from the University of Michigan in 1909. His most important connections were with the Miami Conservancy District in Dayton, Ohio, and the Fargo Engineering Co. of Jackson, Mich., of which he was vice-president for several years. He joined the staff of TVA in 1933 and continued there until his retirement in 1946.

William H. Higbie, a structural engineer with the Jones & Laughlin Steel Service, Long Island City, N. Y., died at Springfield, N. Y., Aug. 30. After getting his C.E. degree at Columbia University, in 1907, he joined Eidlitz & Ross, Inc., structural engineers of New York and was its vice-president in 1920-32 when the firm was doing engineering and construction work for the N. Y. Telephone Co.

Frank G. Davis, 68, manager of the Fairfax Bridge, Kansas City, Mo., and associated with highway construction in Kansas for many years, died Aug. 27. He was graduated from the University of Kansas in 1915 and that year organized the National Old Trails Association, which undertook to construct and mark highways of historic importance in the Central West. Mr. Davis also directed the touring bureau of the association and served as secretary of the Kansas City Regional Plan.

Elmon J. Ewing, 74, president of the Standard Engineering Co., died in Washington, D. C., Aug. 27.

Harry A. Augenblick, 60, of East Orange, N. J., died in New York City, Aug. 29. He took a C. E. degree at Cornell in 1910, and was an assistant engineer in the construction of New York subways and of the Grand Central Terminal. He did construction engineering work in England, Siberia, and the Caucasus. He taught engineering at the University of Michigan. He afterwards became a lawyer and a broker and was a director of the Vulcan Iron Works, Wilkes-Barre, Pa.

Rufe M. Duncan, 63, Oliver Springs, Tenn., county engineer, died Aug. 27. He had served as surveyor for Anderson County for the last 25 years.

James G. Melluish, sanitary engineer, died Aug. 26 in Albany, N. Y. He was a graduate of Massachusetts Institute of Technology and at the time of his death was a sanitary engineer for the division of environmental sanitation of the State Health Department.

George H. Ballantyne, 67, former public works commissioner of Syracuse, N. Y., died there Aug. 28. He resigned in 1945 after having served 20 years.

William C. Mabee, 74, director and retired chief engineer of the Indianapolis Water Co., died Aug. 26. He had retired in 1944. In 1938, he received the Diven Memorial Medal from the American Water Works Association for his work on water main specifications. The Indiana section of the A. W. W. A. presented him with the Fuller Award the same year. He started his four decades of service with the company in 1902 as an engineer in charge of construction of filtration facilities. In 1917 he was appointed assistant chief engineer and in 1928, chief engineer.

Frederick Bateman, 96, oldest graduate of Worcester Polytechnic Institute, having won his degree in 1871, died Sept. 2 at Clinton, Mass. A civil engineer and an expert on railroad-bridge construction, Mr. Bateman did construction work and made surveys in all parts of the country, remaining active until a few months ago.

CONSTRUCTION ACTIVITY

CONTRACT VOLUME

Continental U. S. Only (Thousands of Dollars)

	Week of Sept. 9‡ 1948	Cumulative 1948 (37 wks.)	Cumulative 1947 (37 wks.)
Federal	$17,283	$703,670	$431,201
State & Mun.	50,495	1,841,443	1,065,947
Total Public.	$73,717	$2,551,052	$1,497,148
Total Private	33,177	2,310,023	1,868,124
U. S. Total	**$106,894**	**$4,861,075**	**$3,365,272**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

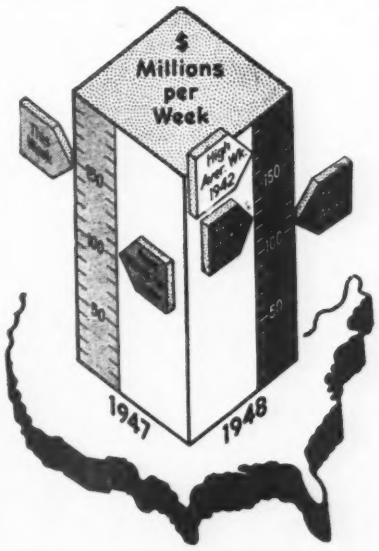
Dollar Volume (Thousands)

Type of Work	This Week	Cumulative 1948 (37 wks.)	Cumulative 1947 (37 wks.)
Waterworks	$3,845	$145,669	$69,784
Sewerage	875	158,517	85,051
Bridges	5,775	206,086	109,986
Highways	23,638	740,060	506,449
Earthwork, Waterways	10,479	367,250	196,350
Buildings, Public	15,061	765,620	358,453
Industrial	13,360	686,598	501,743
Commercial	17,754	1,313,576	1,098,415
Unclassified	16,069	477,699	439,041

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

NEW PRODUCTIVE CAPITAL*

	Cumulative 1948 (36 wks.)	Cumulative 1947 (36 wks.)
NON-FEDERAL	$3,423,764	$1,577,102
Corporate Securities	1,680,968	544,507
State and Municipal	1,250,507	784,884
U. N. Building Loan	65,000	.....
Fed. Aid Highway.	427,289	247,711
FEDERAL	1,558,932	818,729
Total Capital	**$4,982,696**	**$2,395,831**



As Reported this week to ...
Engineering News-Record

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Aug. '47	475.51	228.58
Building Cost	Aug. '47	355.45	192.15
Volume	July '47	254	111

‡ 4-day wk. * Current Figures Unavailable

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager J. A. MAHONEY, Reports E. R. BIGGERSTAFF, M. R. ROESSLER, Statistics

WATER SUPPLY

BIDS ASKED

Bids Asked September 13

Conn., Hartford—Metropolitan Dist., Water Bureau, 650 Main St., construction water mains, East **Hartford, Hartford, Newington,** Windsor and Wethersfield.

B. C., Surrey—Percy Livingstone, municipal clk., Municipal Hall, Cloverdale, 200,000 ft. 4-in. to 12-in. Bell and Spigot cast iron pipe, 10,000 ft. 2-in. galvanized iron pipe.

Bids Asked September 15

O., Port Clinton — City, water treatment plant addn. $150,000. Plans deposit $20. Finkbeiner, Pettis & Strout, 518 Jefferson St., Toledo, engrs. CD 8/2—ENR 8/5.

Bids Asked September 20

Tex., Fort Worth — City, W. O. Jones, city mgr., 15, m.g. pumping unit, incl. pumps and motors. $85,000. Plans deposit $15. Freese & Nichols, 407 Danciger Bldg., engrs. CD 8/31/44—ENR 9/21/44.

Bids Asked September 31

Ala., Prattville — City, water main extens. Roy L. Garrett, Bell Bldg., Montgomery, engr.

LOW BIDDERS

Calif., Oakland—East Bay Municipal Utilities Dist., 512 16 St., watermains, LS-439, from E. T. Haas Co., Box 411, San Mateo, **$80,897.** CD 8/17.

Calif., Oakland—East Bay Municipal Utility Dist., 512 16 St., concrete foundations and anchors and pipeline for 2nd Modelumne Aqueduct, Unit C, Spec. 81, from Ben C. Gerwick Inc., 112 Mardet St., San Francisco, **$982,117.** CD 8/5—ENR 8/12.

Ind., Kendallville—Bd. P. Wks., R. C. Moses, mayor, City Hall, Aug. 26, imprv. W. W., elevated steel tank, from Pittsburg-Des Moines Co., 38 S. Dearborn St., Chicago, Ill., **$124,700** ***iron removal and water softener plant, from Industrial Piping & Engineering Co., 1340 Grant St., Fort Wayne, **$144,000*****watermains extens. from John Dehner, Inc., 1206 Clark St., Fort Wayne, **$40,110.** CD 7/23—ENR 7/29.

Mass., South Deerfield — Town, Water Comrs., concrete reservoir and appurtices, from Thomas J. Glass, 259 Silver St., Greenfield, **$28,000.**

Mass., Worcester — City, Parks & Recreation Comn., City Hall, pumping station, sprinkler sys., at Municipal Golf Course, from Ralph White Constr. Co., 41 Center St., Auburn, **$32,152.** Bids 8/25.

N. C., Charlotte — City, rejected bids Aug. 2, Catawba River Pump Station, L.B. **$245,-990.** Will readvertise. CD 8/5—ENR 8/12. under LB.

N. C., Clarkton—Town, G. M. Parsons, mayor, Aug. 25, water sys. from E. A. Deconynck Co., 3215 Duncan St., Columbia, S. C., **$52,305.** CD 8/11—ENR 8/19.

N. C., Durham—City, R. W. Flack, city mgr., Aug. 24, WW imprvs. from Wm. Muirhead Constr. Co., Durham, **$883,278.** CD 7/21—ENR 7/29.

N. C., Forest City—Town, Aug. 24, raw water intake and pumping station, filtration plant, electric lines from C. W. Gallant & Glenn Constr. Co., 206 Latta Arcade, Charlotte, **$331,521*****raw watermain, service force main, and connections from Lee Constr. Co., 422 S. Church St., Charlotte, **$140,219.** CD 8/4—ENR 8/12.

†Oregon—U. S. Eng., 628 Pittock Block, Portland, Aug. 27, water and sewer facilities at McNary Dam. No. 35-026-49-56, Umatilla Co. from Malaspina Napoli Co., 1901 23 South St., Seattle, Wash. **$171,712.** Est. **$199,979.** CD 8/16—ENR 8/19.

†Oregon — U. S. Eng., Pittock Block, Portland, Aug. 26, drilling, mfg., erecting 2 100,000 gal. water tanks, with 100 ft. tower and one 250,000 gal. water tank with 80 ft. tower for water supply sys. at McNary, Umatilla Co. No. 35 026-49-73 from Ira S. Harding & Co., Aberdeen, Wash. **$115,986.** Est. $140,298.

Tex., El Paso — El Paso Water Control & Imprv. Dist. 3, L. E. Garrett, pres., Aug. 24, WW sys. extens., imprvs. from Holland Page, 7114 Georgetown Rd., Austin, **$210,000.** CD 4/22—ENR 5/13.

Tex., Hamlin—City, c/o Holly Toler, mayor, Aug. 20, electric water tank from Pittsburgh-Des Moines Steel Co., Praetorian Bldg., Dallas, **$32,210.** Est. $30,000. CD 8/3—ENR 8/5.

Tex., Houston—City, M. H. Westerman, secy., Aug. 4, 12 in. c. i. watermain underneath Main St. viaduct, from Commerce to Sumpter St., **$29,085.** CD 3/16/44—ENR Collins Place from Viking Constr. Co., 3014 4/6/44.

Tex., Marshall—City, c/o secy., Aug. 26, filter plant from Dolph Constr. Co., 3901 Elm St., Dallas, **$247,762.** Est. $225,000. CD 8/9—ENR 8/12.

Wis., Montello — City, Aug. 17, WW sys. distr. from Adolph Lorenz, 1201 Dobin St., Green Bay, **$44,005.** CD 7/27—ENR 7/29.

CONTRACTS AWARDED

Calif., San Rafael — Marin Municipal Water Dist., 874 4 St., water pipe line, to Edwards, Fauld & Dana, Redwood City, **$28,950.** Bids 8/10—Awarded 8/10.

Mass., Norwell — Town, Water Dpt., Town Hall, water sys., Ridge and Church Hills, to P. & P. Di Mascio & Sons, Inc., 73 Olney St., Dorchester, **$47,510.** Bids 8/13. CD 8/23—ENR 8/26, under LB.

Neb., Lincoln — City, watermains, Dist. 201, to George L. Vlasnik, 1721 S. 22 St., **$34,-688.** Est. $35,000. Bids 8/18. D. L. Erickson, Lincoln, city engr.

Okla., Duncan — City, earth fill dam for impounding water supply Sect. A to Stamey Constr. Co., Hutchinson, Kas., **$287,237.** Est. $300,000***Sect. B, steel standpipe to Chicago Bridge & Iron Co., Hunt Bldg., Tulsa, **$63,900.** Est. $65,000***Sec. C, 15 mi. c.i. watermains in distr. sys. to Sherman Machine & Iron Works, 26 E. Main St., Oklahoma City, **$444,473.** Est. $440,000. Grand total $795,610. Bids 8/18. V. V. Long & Co., Colcord Bldg., Oklahoma City, engr.

Okla., Henryetta — City, repairing spillway at Henryetta Lake spillway to James Bros. Co., Okmulgee, **$31,431.** Est. $35,000. L. M. McGoodwin, Fayetteville, Ark., engr. Bids 8/20.

Tex., Beaumont—Anderson Constr. Co., 3420 Cleveland St., c. i. waterlines and facilities, between Cleveland and Steelton Aves. and from Earl St. north. Owner builds. **$40,000.** CD 3/22/46—ENR 4/4/46.

Tex., Corpus Christi — City, Callallen filtration plant expans to Tellepsen Constr. Co., 3900 Clay St., Houston, **$554,777.** CD 8/25—ENR 9/2.

Wis., Sheboygan Falls — Sheboygan County, reconstructing fire protection sys. at County Hospital to Murphy Constr. Co., 1014 Michigan Ave., Sheboygan, **$29,262.** J. Donohue Engr. Co., Sheboygan, engr.

SEWERS, WASTE DISPOSAL

BIDS ASKED

Bids Asked September 13

Conn., Hartford — Metropolitan Dist., Bureau Pub. Wks., 650 Main St., 2,813 ft. 42 in. trunk sewer, New Britain Ave., Newington, CD 11/29/45—ENR 2/8/45.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks $28,000; other public works $50,000; industrial buildings $68,-000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

♦	Federal Government
●	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

Bids Asked September 15

Calif., Los Angeles—City, Bd. P. Wks., 153 City Hall, sanitary sewers, 10,172 ft. of 6-in. to 33-in. sewer pipe, 24 manhole structures, DeSotos and Sherman Way Sewer Dist., Chatsworth. Over $50,000. Lloyd Aldrich, city engr.

Bids Asked September 21

Calif., Los Angeles—Los Angeles Bd. Supervisors, 501 Hall of Records, 5½ mi. 6-in. to 10-in. vitr. clay sewers on Perry Rd. 118 brick sewer structures, Bell Gardens, $116,510. CD 8/16—ENR 9/2.

Bids Asked September 23

Calif., Walnut Creek, — Central Costa Sanitary Dist., 1822 Mt. Diablo Blvd., main trunk sewer, Sec. 6. Over $60,000. Plans deposit $10. CD 6/16/47—ENR 6/26/47.

Bids Asked September 28

Ore., John Day — City, City Hall, 13,500 lin ft. sewer sys., sewage treatment plant. Plans deposit $15. C. E. Stockman, Rand Bldg., Baker engr. CD 5/23/47—ENR 6/12/47.

LOW BIDDERS

Calif., Los Angeles — City, Bd. P. Wks. 153 City Hall, 15,762 ft. 6- and 8- in. vitr. clay sanitary sewers, 37 manholes structures, Woodley Ave. and Sherman Way Sewer Dist. from Robert Vlacich, 2314 Carlyle Pl., **$75,960.** CD 8/16.

Calif., Oakland — City, City Hall, received no bids Aug. 24, sanitary sewer sys. in Thornhill Park and Forestland tracts., **$52,639.** CD 8/16.

Mass., Worcester — City, Mayor's Office, City Hall, sewerage pumping station, from Rich Bros. Constr. Co., 410 Park Square Bldg., Boston, **$49,937.** CD 8/17—ENR 8/19.

North Dakota—State Hy. Dpt., Bismarck, rejected bids Aug. 27, 0.651 mi. storm sewers, Walsh Co. L. B. 128,500. CD 8/12—ENR 8/19.

Tex., El Paso — El Paso Water Control & Imprv. Dist. 3, L. E. Garrett, pres., Aug. 24, sanitary sewer sys. extens., and imprvs. from Holland Page, 7114 Georgetown Rd., Austin, **$240,000.** CD 7/23—ENR 7/29.

Tex., Post — City, Aug. 24, sanitary sewer sys. extens. and imprvs. from Sherman Machine & Iron Works, 23 E. Main St., Oklahoma City, Okla., **$90,736.** Est. $200,000. John Herd, city engr.

Wis., Slinger — Village, rejected bids May 18, sewage treatment plant, L.B. **$145,878.** CD 5/25—ENR 5/27. under LB.

CONTRACTS AWARDED

Colo., Englewood — City, E. E. Anderson, city clk., City Hall, Aug. 23, sewer sys. extens., to Latimer Constr. Co., W 9 Wyandot St., Denver, **$62,500.** Est. Over $50,000. CD 8/17.

R. I., Cranston — City, City Hall, 6,500 ft. sewer through rein.-con. and deep rock, Elmwood Ave. to Cibotti & Andreassi, 52 Charme Ave., Roslindale, Mass., **$233,825.** Fay Spofford & Thorndike, 11 Beacon St., Boston, Mass., engrs. Bids 8/11.

R. I., Providence—City, Dennis J. Roberts, mayor, City Hall, sewers and appurtenances, Valley View Housing to C. L. Guild Constr. Co., 54 Water St., E. Providence. **$66,132.**

Tex., Beaumont—Anderson Constr. Co., 3420 Cleveland St., sanitary sewers, between Cleveland and Steelton Aves. and from Earl St. North. Owner builds. $65,000. CD 3/22/46—ENR 4/4/46.

BRIDGES

BIDS ASKED

Bids Asked September 13

Connecticut—State Hy. Dpt., G. A. Hill, State hy. comr., State Office Bldg., Hartford, rolled beam bridge over Pequonnock River, 1,183 ft. bituminous approaches on White Plains Rd., F. A. P. Proj. S-47 (1), Trumbell; 105 ft. continuous span beam bridge over Wintergreen Ave. (north crossing) and 965 ft. gravel approaches on Wintergreen Ave., Wilbur Cross Parkway, Proj. Hamden; single span deck beam bridge over R.R., 2,160 ft. bituminous concrete approaches U. S. Rt. 6, Clarks Corner, Proj. WPGH-FAGH 135A (1), Hampton; 70 ft. clear span bridge rolled beam over Scantic River, 825 ft. bituminous macadam approaches Rt. 191, S-46 (1), Enfield; 48 counterforts and shotcrete repairs bridge 91-22, State Rt. 91 over Quinnebaug River, Putnam; stringers and concrete filles grid deck, Saugatuck River Bridge, Rt. 1, Westport.

Bids Asked September 14

Iowa—State Hy. Comn., Ames, one 60x20 ft. I-beam bridge etc. and one 40x20 ft. I beam bridge, local road between Sect. 5/6-76-33 between Sect. 31/32-77-33, Proj. S.N. 948, one 40x20 ft. I-beam bridge local road over Nine Mile Run Creek between Sect. 29/32-75-31, Proj. S.N. 949, Adair Co.; 157.5x16 ft. high truss bridge with two 24x16 ft. I-beam ap-